network link **620** and through communication interface **618**, which carry the digital data to and from computer system **600**, are exemplary forms of carrier waves transporting the information.

Computer system **600** can send messages and receive data, including program code, through the network(s), network link **620** and communication interface **618**. In the Internet example, a server **630** might transmit a requested code for an application program through Internet **628**, ISP **626**, local network **622** and communication interface **618**. In accordance with the invention, one such downloaded application provides for dynamically generating a virtual three-dimensional world as described herein.

The received code may be executed by processor **604** as it is received, and/or stored in storage device **610**, or other non-volatile storage for later execution. In this manner, computer system **600** may obtain application code in the form of a carrier wave.

Thus, flexible methods and mechanisms for storing, dynamically reconstructing, and navigating a three-dimensional virtual world have been described.

In the foregoing specification, the invention has been described with reference to specific embodiments thereof. It will, however, be evident that various modifications and changes may be made thereto without departing from the broader spirit and scope of the invention. For example, certain nodes have been described in terms of specific VRML source code that is the preferred mode of implementing the nodes; however, other functionally equivalent code, in VRML or an equivalent language, can be used and is within the scope of the invention. Further, a database schema has been described as a specific example of one implementation or embodiment of the invention; however, the invention is not limited to that schema or the columns represented in the tables of the schema. Other equivalent data structures and data representations can be used in addition to or in place of the schema. And while the invention has been disclosed in the context of the VRML language, it is not limited to that context; the mechanisms of the invention can be used in the context of any other descriptive language. The specification and drawings are, accordingly, to be regarded in an illustrative rather than restrictive sense.

What is claimed is:

1. A method of generating a display of a virtual world from a first source definition of the virtual world, the method comprising the steps of:

(A) storing in a database a description of a node that is defined in the first source definition;

(B) storing in the database, in association with a field value of the node in the description, a statement that describes a database operation;

(C) executing the statement using the database to generate a data value from the database;

(D) delivering a second source definition of the virtual world to a client that is configured to generate the display using the second source definition, in which the second source definition uses the data value for the field of the node.

2. The method recited in claim **1**, wherein step (B) includes the step of:

storing, in association with the field value, a Structured Query Language (SQL) statement configured to carry out the database operation on the database.

3. The method recited in claim **1**, wherein step (B) further comprises the steps of:

storing a PL/SQL procedure in a server with which the client interacts; and

storing a PL/SQL function call in association with the field.

4. The method recited in claim **1**, wherein step (B) includes the steps of:

declaring a variable; and

storing the variable in association with the statement.

5. The method recited in claim **4**, wherein step (D) includes the step of:

providing a value of the variable to the statement when the virtual world is displayed.

6. The method recited in claim **4**, wherein step (D) includes the step of:

providing a value of the variable to the statement when the statement is executed.

7. The method recited in claim **1**, further comprising the steps of:

selecting the field value of the virtual world;

defining the statement to generate a custom node associated with the field value when the statement is executed; and

storing the statement in association with the field value.

8. The method recited in claim **7**, wherein the step of storing a statement includes the step of:

defining a PL/SQL procedure configured to generate the custom node; and

wherein the step of storing the statement includes the step of storing a PL/SQL function call corresponding to the PL/SQL procedure in association with the field value.

9. The method recited in claim **1**, further comprising the steps of:

selecting the field value;

storing information that identifies a second virtual world in association with the field value.

10. The method recited in claim **9**, further comprising the steps of:

reading a second node from the second virtual world; and

storing a second node description of the second node in association with the field value.

11. The method recited in claim **10**, further comprising the steps of:

reading a Virtual Reality Modeling Language (VRML) definition of the second node from a source code file; and

converting the VRML definition into the second node description.

12. The method recited in claim **1**, wherein the step of storing a statement comprises the steps of:

selecting the node, the field value, and an element of the field value;

defining the statement to yield the data value for the field value when the statement is executed; and

storing the statement in association with the element.

13. The method recited in claim **12**, further comprising the steps of:

defining a variable parameter in association with the statement; and

at the client, supplying a variable value to the variable parameter when the second source definition is delivered to the client.

14. A computer-readable medium carrying one or more sequences of one or more instructions for generating a